

## Chapter 7 Review

- 1) Simplify the following problems and show your work.

Example:  $49^{(3/2)} = (\sqrt{49})^3 = (7)^3 = 343$

a)  $\sqrt[5]{243x^3y^7z^{13}}$

b)  $16^{(3/4)}$

c)  $(216^{(1/6)})^{-2}$

d)  $\sqrt[3]{54x^2y^3} \cdot \sqrt[3]{5x^3y^4}$

e)  $4^3 \cdot 4^{-6}$

f)  $\frac{5^3 \cdot 5^{-5}}{(5^2)^{-3}}$

- 2) Convert each radical expression to exponential form

a)  $\sqrt[4]{x}$

b)  $4\sqrt{x^3}$

c)  $(\sqrt[3]{x})^7$

- 3) Rationalize and simplify

a)  $\frac{\sqrt{56x^5y^5}}{\sqrt{7xy}}$

b)  $\frac{3+\sqrt{8}}{2-2\sqrt{8}}$

4) Solve for x. Show your work and check for extraneous answers.

a)  $\sqrt[3]{x} = 3.1$

b)  $4x^7 - 6 = -2$

c)  $(27x^6)^{2/3} = 2304$

d)  $3\sqrt{x} + 3 = 15$

e)  $\sqrt{6-3x} - 2 = 0$

f)  $(x-2)^{\frac{2}{3}} = 9$

g)  $\sqrt{11x+3} - 2x = 0$

h)  $\sqrt{3x+13} - 5 = x$

i)  $x+8 = (x^2+16)^{\frac{1}{2}}$

j)  $(2x-1)^{\frac{1}{3}} = (x+1)^{\frac{1}{6}}$

Answers – ch.7 Review Algebra 2

1a)  $3yz^2\sqrt[5]{x^3y^2z^3}$

1b) 8

1c)  $\frac{1}{6}$

1d)  $3xy^2\sqrt[3]{10x^2y}$

1e)  $\frac{1}{64}$

1f) 625

2a)  $x^{\frac{1}{4}}$

2b)  $x^{\frac{3}{4}}$

2c)  $x^{\frac{7}{3}}$

3a)  $2x^2y^2\sqrt{2}$

3b)  $\frac{11+8\sqrt{2}}{-14}$

4a)  $x = 29.791$

4b)  $x = 1$

4c)  $x = 4$

4d)  $x = 16$

4e)  $x = \frac{2}{3}$

4f)  $x = -25$  and  $29$

4g)  $x = 3$

4h)  $x = -3$  and  $-4$

4i)  $x = -3$

4j)  $x = \frac{5}{4}$